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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Konstantin Aab

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7590

05/06/2004

STALLMAN & POLLOCK LLP

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EXAMINER

VY, HUNG T

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

10/035,351

Applicant(s)

AAB ET AL.

Examiner

Hung T Vy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2003.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-47 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/22/2004.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. In response to the amendment filed on 09/26/2004, claims 1-47 are pending in this application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraph of 35 U.S.C. § 102 in view of the AIPA and H.R. 2215 that forms the basis for the rejections under this section made in the attached Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

35 U.S.C. § 102(e), as revised by the AIPA and H.R. 2215, applies to all qualifying references, except when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. For such patents, the prior art date is determined under 35 U.S.C. § 102(e) as it existed prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. § 102(e)).

Claims 1-2,5-17,20-36, and 39-47 are rejected under 35 U. S. C. § 102 (e) as being anticipated by Algots et al., U.S. patent No. 6,192,064.

Regarding claims 1-2, 7-8,11-14,17, 20, 23,27, and 31-32, Algots et al. discloses an excimer or molecular fluorine laser system, comprising: a discharge chamber (3) filled with a gas mixture at least including molecular fluorine and a buffer gas (See

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column 8, line 47-48 and column 1, line 28); a plurality of electrodes (See column 1, line 31) within the discharge chamber connected to a discharge circuit for energizing the gas mixture; a resonator including a pair of resonator reflecting surfaces disposed on either side of the discharge chamber for generating a laser beam (See column 1, line 41-60), said resonator further including a deformable third reflecting surface (14)(See column 8, line 66-67 and column 9, line 1-24) disposed between the pair of resonator reflecting surface; a line-narrowing/selection unit (13) within the resonator for narrowing the bandwidth of the laser beam (See column 4, line 16-28); a detector for detecting the bandwidth of the laser beam(See column 5, line 11); and a processor for receiving a signal indicative of said bandwidth from said detector and controlling a surface contour of aid deformable third reflecting surface to control said bandwidth in a feedback arrangement (See column 4, line 64-68 and column 5, line 1-11), deformation means for controllably adjusting the surface contour of said deformable third reflecting surface(14) (See fig 1), a spectrometer for measuring the bandwidth of laser beam (See column 2, line 1-10).

Regarding claims 5-6,9-10,15-16, 21-22, 24, 28-30,Algots et al. discloses the laser system wherein line-narrowing/selection unit (13) includes beam expander (8,10,12) and dispersive element (16), and wherein said deformable third reflecting surface (14) is disposed between said beam expander and said dispersive element (16), deformable third reflecting surface (14) is disposed just before said dispersive element (16) (See fig 1,2,9,10,11), the dispersive element (16) is a grating serving as one of said pair of resonator reflectors (See fig 2).

With respect to claims 25-26, the methods of adjusting are considered as product by process steps.

Regarding claims 33, 36, 39-42 and 45-47, Algot et al. discloses an excimer or molecular fluorine laser system, comprising: a discharge chamber (3) filled with a gas mixture at least including molecular fluorine and a buffer gas (See column 8, line 47-48 and column 1, line 28); a plurality of electrodes (See column 1, line 31) within the discharge chamber connected to a discharge circuit for energizing the gas mixture; a resonator including a pair of resonator reflecting surfaces disposed on either side of the discharge chamber for generating a laser beam (See column 1, line 41-60), a bi-directional bandwidth controlled folding mirror assembly, the mirror assembly including; a folding mirror; a coupling plate coupling with the mirror (14); an adjustment spindle (15) penetrating through a cavity defined in the coupling plate, and wherein screwing the adjustment spindle in a first direction increase a concavity of a surface contour of the folding mirror, and screwing the adjustment spindle in a second direction opposite to said first direction decreases the concavity of the surface contour of the folding mirror (14)(see column 7, line 8-34), further comprising a motor (15) for motorizing the adjustment spindle (see column 7, line 3-5), a piezo (14B) transducer coupled with coupling plate (14C), and wherein operating the piezo in a first direction increases a concavity of the folding mirror, and operating the piezo transducer in a second direction opposite to said first direction decreases a concavity of the folding mirror (See column 7, line 8-23).

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Regarding claims 34-35, discloses the resonator comprising at least one spring disposed between a portion of said coupling plate and a head of said adjustment spindle (See fig 6), it is inherent that the resonator further comprising a movable nut on the adjustment spindle as pivot in order to adjust the plate (See fig 9a).

Claim Rejections - 35 U.S.C. § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-4, 18-19, 37-38, and 43-44 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Algots et al., U.S. patent No. 6,192,064.

Regarding claims 3-4, 18-19, 37-38 and 43-44, Algots et al. discloses the claimed invention except for different the deformable third reflecting surface as cylindrical, spherical, convex or concave mirror. It would have been obvious to one having ordinary skill in the art at the time the invention was made to different the deformable third reflecting surface, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Citation of Pertinent References

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The patent to Everage et al. discloses fast Wavelength correction Technique for Laser, U.S. Patent No. 6,529,531.

The patent to Fomenkov et al. discloses smart Laser with Fast Deformable Grating, U.S. Patent No. 6,493,374.

The patent to Erie et al. discloses smart Laser With Automated Beam Quality Control, U.S. Patent No. 6,212,217.

Response to Arguments

5. Applicant's arguments filed on 07/27/2003 have been fully considered but they are not persuasive. Applicant made the following arguments:

a. "The "deformable mirror" of Algots does not have a controllable surface contour capable of controlling the bandwidth of the laser beam, but instead contains a "segmented" mirror where each segment has an associated tilt control. Each mirror can be tilted at "the required angle" in order to obtain the proper reflection angle for each portion of the laser beamAlgots, however, does not disclose a deformable mirror having a surface contour capable of controlling bandwidth as set forth in applicant's claim 1. Indeed, Algots teaches a

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very different method of controlling bandwidth using a 'grating assembly having a bidirectional control unit attached to it". page 12 second full paragraph.

b. "As Algots does not disclose all limitations of claim 1, Algots cannot anticipate Applicants' claim 1. Independent claims 7, 13, 17, 23, 25, 27, 33, and 42 recite similar limitations not disclosed by Algots, including for example "a third reflecting surface disposed between the pair of resonator reflecting surfaces and having a surface contour which is deformable in order to control the bandwidth of the laser beam" and "a processor for receiving a signal indicative of said at least one laser system parameter from said detector and controlling a surface contour of said deformable third reflecting surface in a feedback arrangement in order to control at least the bandwidth of the laser beam." Claims 2, 5-6, 8-12, 14-16, 20-22, 24, 26-32, 34-36, 39-41 and 43-47 depend from these claims and therefore also are not anticipated by Algots. Applicants therefore respectfully request that the rejection with respect to claims 1-2, 5- 17, 20-36, and 39-47 be withdrawn." page 13 second full paragraph.

In response to Applicant's argument a above, the applicant's argument is not persuasive because the Applicant's argument is not in claim language. In claim language, the claims recite a deformable third reflecting surface. Algots discloses a deformable third reflecting surface (See column4, line 64-68 and column 5, line 1-11). There are no different between of "a deformable mirror" between the reference and the claim. Algots does have a controllable surface contour capable of controlling the

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bandwidth of the laser beam (See column 2, line 21-39). The “deformable mirror” of Algots can be a “segmented”, or whole “mirror” (See figs. 9-12).

In response to Applicant’s argument **b** above, the applicant’s argument is not persuasive because Algots discloses all limitation of claim as a third reflecting surface (14) disposed between the pair of resonator reflecting surfaces and having a surface contour which is deformable (See column 8, line 65) in order to control the bandwidth of the laser beam (See column 2, line 23-25) a processor (24) for receiving a signal indicative of said at least one laser system parameter from said detector (wavemeter) and controlling a surface contour of said deformable third reflecting surface in a feedback arrangement in order to control at least the bandwidth of the laser beam (See column 2, line 23-40).

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Vy whose telephone number is (703) 605-0759. The examiner can normally be reached on Monday-Friday 8:30 am - 5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul IP can be reached on (703) 308-3098. The fax numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Hung T. Vy
Art Unit 2828

April 22, 2003



Wilson Lee
Primary Examiner